

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference BP/G-33319A/SZB	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/EP2004/009321	International filing date (day/month/year) 19/08/2004	(Earliest) Priority Date (day/month/year) 20/08/2003
Applicant SANDOZ AG		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/009321

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12P21/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12P C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HART R A ET AL: "Large scale, in situ isolation of periplasmic IGF-I from E. coli" BIO/TECHNOLOGY, vol. 12, November 1994 (1994-11), pages 1113-1117, XP001153305 ISSN: 0733-222X abstract page 1116, right-hand column, lines 3-50	1-3,6,9, 16-21,23
A	WO 01/94585 A (CHAPMAN ANDREW PAUL ; KING DAVID JOHN (GB); ATHWAL DILJEET SINGH (GB);) 13 December 2001 (2001-12-13) cited in the application page 35, line 31 - page 36, line 8 page 34, line 29 - page 35, line 17 page 38, lines 4-31 page 40, lines 7-29 ----- -/--	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

16 December 2004

Date of mailing of the international search report

10/03/2005

Name and mailing address of the ISA

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International Application No
PCT/EP2004/009321

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 93/06217 A (GENENTECH INC) 1 April 1993 (1993-04-01) page 30, line 30 - page 31, line 15	1
T	ANDERSEN D C ET AL: "Production technologies for monoclonal antibodies and their fragments" CURRENT OPINION IN BIOTECHNOLOGY, vol. 15, no. 5, October 2004 (2004-10), pages 456-462, XP004588033 ISSN: 0958-1669 page 456, right-hand column, line 3 - page 457, left-hand column, line 12	
X	EP 0 177 343 A (GENENTECH INC) 9 April 1986 (1986-04-09) page 6, line 33 - page 7, line 12 page 7, line 20 - page 9, line 6 page 20, line 15 - page 22, line 4 example 8 claims 12,13,15,16	1,6, 9-12, 16-23
X	WO 03/004599 A (PANCER ZEEV ; PELEG YOAV (IL); INSIGHT STRATEGY & MARKETING L (IL)) 16 January 2003 (2003-01-16) examples 2,3	1-5,14, 15,17-23
A	EP 0 974 654 A (MITSUI CHEMICALS INC) 26 January 2000 (2000-01-26) paragraphs '0066!, '0067! examples 1-3	1
A	EP 0 587 427 A (MITSUI TOATSU CHEMICALS) 16 March 1994 (1994-03-16) examples 3,4	1
A	DE OLIVEIRA J E ET AL: "High-yield purification of biosynthetic human growth hormone secreted in Escherichia coli periplasmic space" JOURNAL OF CHROMATOGRAPHY A, ELSEVIER SCIENCE, NL, vol. 852, no. 2, 13 August 1999 (1999-08-13), pages 441-450, XP004177405 ISSN: 0021-9673 paragraph 2.2	1
A	WO 01/57217 A (CHOI KI DOO ; KWON SE CHANG (KR); BAE SUNG MIN (KR); JUNG SUNG YOUB (K) 9 August 2001 (2001-08-09) comparative example 2 examples 3,4 table I	1
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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>HANNIG G ET AL: "Strategies for optimizing heterologous protein expression in Escherichia coli" TRENDS IN BIOTECHNOLOGY, vol. 16, no. 2, February 1998 (1998-02), pages 54-60, XP004107042 ISSN: 0167-7799 figure 2 page 58, left-hand column, lines 13-45 -----</p>	
A	<p>MIDDELBERG A P J: "Process-scale disruption of microorganisms" BIOTECHNOLOGY ADVANCES, vol. 13, no. 3, 1995, pages 491-551, XP004045404 ISSN: 0734-9750 the whole document -----</p>	
A	<p>BANEYX F: "Recombinant protein expression in Escherichia coli" CURRENT OPINION IN BIOTECHNOLOGY, vol. 10, no. 5, October 1999 (1999-10), pages 411-421, XP001041299 ISSN: 0958-1669 page 418, left-hand column, lines 4-49 -----</p>	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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